



West of Walla Walla, irrigated alfalfa hay, onions, asparagus, fruit orchards, and vineyards are the primary crops.

Mean annual precipitation in the region varies from less than 10 inches per year west of Walla Walla, to more than 70 inches in the Blue Mountains. Ninety percent of the precipitation falls between September 1 and May 1, with 25% of the inter precipitation coming in the form of snow. At lower elevations the maximum summer temperature ranges from 80 F to 95F, but often exceeds 100F every year. Winter temperatures range from 30F to 40F.

## **HISTORY**

The original inhabitants of the region included the Cayuse, Walla Walla, Umatilla and Nez Perce Native American Indian Tribes. Lewis and Clark visited the region in 1805 and it looked much differently then today. They described a region that had abrupt and rocky hills with a narrow fertile bottom with an abundance of wood. The trees consisted of cottonwood, birch, and other riparian species including sumac, gooseberry and corn-grasses and rushes. The fertile bottomland was two to three miles wide with abundant timber. An excerpt from a scientist in 1916 described a fairly narrow riparian zone along the lower Touchet River, not exceeding a quarter of a mile. But that within the quarter mile wide belt, the cottonwood trees were very large with a height of 80 to 100 feet and trunks four feet in diameter. Under the large trees he reported smaller trees and a heavy growth of shrubby underbrush. He reported that the habitats of animals in the region have been greatly altered by the work of man. Farming has converted much of the land to cultivation. The land not under cultivation has been heavily grazed by cattle and other livestock. Part of the timber along the streams has been cut down and much of the brush cleared.

Livestock production, logging, and agriculture occurred in the region beginning in the late 1800's and have all impacted the natural resources of the region. Settlers arrived in the region in large numbers in the 1880's and created a demand for wood. Riparian forests and conifer forests in the Blue Mountains supplied the settlers with wood. Logs were commonly yarded across streams, logging roads were built in the riparian area, and stream channels were modified to reduce road construction costs. Clear cutting was the logging method of choice.

Cities and towns began appearing in the 1860's. Roads were developed to access rural areas and were usually build in the valley floor along a stream. Streams were modified to facilitate road construction. Bridges were constructed and streams were modified to align with the bridges.

## **CURRENT HABITAT CONDITIONS**

### Grazing

Historically over-stocking and continuous grazing of rangelands have been major factors in the deterioration of more than one half a million acres of rangeland in the basin (USDA 1984a). Much of the rangeland that is in good condition today remains that way due to its steep topography, rockiness, lack of water, or remoteness. Most rangeland with deep soil has been over utilized, which has deteriorated its ecological condition, production capacity and has resulted in poor moisture holding capacity.

### Logging

Timber removal has occurred in the region since the late 1800's and initially occurred in the lower elevation, flatter areas. As timber became scarce, efforts moved further into the mountains and further upslope. Today, there are ### miles of logging roads that vary from properly restored to those in a deteriorated condition. Properly restored logging roads can be described as revegetated with grass and conifer sp. trees and typically out sloped with properly functioning cross draining ditches. Deteriorated logging roads are poorly revegetated, in-sloped and generally poorly drained. Deteriorated logging roads contributed to mass wasting, sediment production and delivery, and solar input to adjacent streams. There

are an estimated ### miles of deteriorated logging roads in the region. Most of which are in the Blue Mountains and both privately and publicly owned.

### Agriculture

There are ## acres of non-irrigated agriculture lands in the region. The majority of these acres are in cereal grain production. Land upon which cereal grains are produced are typically seeded into finely tilled soil in the fall, harvested in the summer, tilled during the next spring and summer and seeded in the late fall. These lands can be highly erodible and may contribute a substantial amount of fine sediment to area rivers depending upon their proximity and erodibility. Peas, corn, alfalfa, and hay crops are grown on the remaining non-irrigated agriculture lands. Other than peas, which are produced much like cereal grains, these crops do not substantially deteriorate riverine conditions, unless they impose upon the floodplain and riparian zone.

### Development and Roads

There are only three cities with more than 10,000 residents in the region. There are nine state highways with a total length of 297 miles. There are an additional ## (Columbia co. = 130, WW co. = , Garfield Co. = 127 and Asotin Co. = 162) miles of paved roads owned by the four counties in the region. Growth management and shoreline protection rules vary across the region.

### Recreation

The major recreation type in the undeveloped areas include snow skiing, snowmobiling, water skiing, ATV and motorcycle riding, hunting, fishing, camping, and horse back riding.

## **CAUSES FOR DECLINE**

Habitat loss resulting from the straightening of rivers is one of the major causes of the degraded habitat conditions of the region today. Straightened rivers flow faster, become incised and disconnected from the flood plain, have low pool:riffle ratio, lack complex habitat, don't dissipate flood energy well, are morphologically unstable and tend to be warmer. Irrigation withdrawals in the Walla Walla basin have resulted in de-water reaches during the summer months and inadequate flows during the spring and fall for adult salmon to ascend the stream. Agriculture, grazing, and logging activities have resulted in poor soil moisture holding capacity and an accentuated hydrograph, increased sediment delivery, and loss of riparian areas. Development and road construction in the valley floors has resulted in constrained channels and loss of riparian area.

## **RECOVERY STRATEGY**

The Snake River Salmon Recovery Strategy is to provide a regional understanding of the reasons that salmon habitat is impaired, what caused those impairments, how to restore those habitats and what the future desired condition looks like. Specifically our strategy has been to create a regional board who represents all of the people in the region. The board contains one technical and two citizen representatives from each county. The Nez Perce Tribe and Confederated Tribes of Umatilla Indian Reservation have one representative each. This makes six technical representatives and eight citizens members who have consistently participated in scoring and ranking projects in this region.

Concurrent with development of the review committee and recovery board, documents containing information on historic condition, land activities that have occurred over the last century and how those activities impacted salmon habitat were reviewed and summarized. More recently, we have searched for

methods and funding for restoring those habitats to a properly functioning condition that is supported by all the people in the region.

The strategy relies mostly on citizens and municipality representatives to serve needs of the general public regarding project types. For example to restore properly functioning riparian and floodplain habitat, all levees would be removed. But, socially that approach would not be supported. Conversely, perhaps municipalities would prefer that rivers be straightened through cities to maximize growth potential. The strategy relies mostly on technical agency representatives to provide limiting factors information, preferred project location and type, as well as monitoring needs.

## **PROJECT IDENTIFICATION AND SELECTION**

Projects can be identified by technical agency staff, citizens, tribal representatives, conservation districts, and citizens familiar with the rivers and limiting factors for salmon recovery. Through the efforts to involve landowners and citizens in the salmon recovery effort in the region, there is a general understanding of what the riverine condition should look like for recovery. Armed with that knowledge, citizens and landowners have the ability to recognize impaired sites and suggest to the committee projects that would restore those locations. Similarly, technical agency representatives who have an understanding of the desired future condition can suggest projects to restore locations familiar to them. Lastly, and perhaps most important is the identification of projects recognized in the limiting factors analysis, subbasin summaries, and watershed documents.

Project selection occurs in several steps. The first is gaining general informal support for a project by the technical representatives. The next step is discussing the project with members of the committee to determine if the project has general social acceptance. If a project is supported by technical agency representatives and by the citizen and landowner representatives, the project sponsor completes a project description for further review by the entire committee. The committee reviews the project description and provides response to the sponsor. After addressing the concerns the sponsor re-submits the project to the committee for scoring. The committee scores all project proposals submitted using project scorecards.

## **PROJECT SCORECARDS**

The committee recognized that discrete project types occur in the region and that ranking projects of the same type would be fairly easy but that ranking project of different type would be difficult. For example, two proposed riparian projects could be compared against each other and ranked based on various factors including the length of stream addressed, width of the proposed project, length of time that the project will be under contract. But comparing a riparian project with a water conservation project would be quite difficult. For this reason, the committee developed scorecards for 5 discrete project types and then a comprehensive matrix to synthesize information about each project and produce a ranked list based on points.

The five discrete project types are riparian, instream, upland, water conservation and studies and assessments.

Riparian projects generally include revegetation, fencing, and an easement or agreement that the landowner will not disturb the riparian area. These projects are generally funded by the Conservation Reserve Enhancement Program or with a combination of CREP and SRFB funding. Instream habitat projects are generally constructed to produce pool habitat or complex habitat for juvenile salmon. They also may be used to stabilize eroding banks so that vegetation can be established. Upland projects consist of direct seeding, grass waterways, sediment ponds or other upland project aimed at reducing erosion, sedimentation, and increasing the moisture holding capacity of the uplands. Water conservation projects include the purchase of water rights or leasing water rights. This project type also includes water delivery and on-farm conservation projects. The last project type, studies and assessments, are aimed at providing information that will lead to a project. For example, there may be a fish passage barrier in a stream that may or may not contain salmonids. An appropriate study and assessment project would be to conduct

surveys in the stream below the barrier to determine if salmonids are present and if so if the barrier truly restricts fish passage. If so, that a project to remove the barrier would be appropriate.

The committee has developed conditions that each project must meet before being scored as well as the assumed benefits of implementing each project type:

Riparian Habitat Project Conditions:

- Riparian revegetation projects will have livestock exclusion or control practices in place prior or simultaneous to project implementation, i.e., a fence will be constructed prior to planting trees if livestock are present.
- A mixture of native woody and shrub species will be planted on 5 – 15 foot centers to ensure ecological diversity and mimic natural conditions. Density will be at least 500 stems per acre.
- Any project that protects the riparian area is eligible, i.e., livestock fencing, alternative water sources, etc.
- Although we prioritize wide riparian habitat projects, we recognize that in some locations that there are physical constraints limiting projects to less than the desirable riparian width.
- Riparian projects implemented in locations of cool water that do not currently have healthy riparian areas are preferred over projects in lower reaches that are already near the temperature threshold for salmonids.

Riparian Habitat Project Benefits:

- Riparian buffers set “side boards” between which the river can meander and return to natural functions (LWD recruitment, natural geomorphology, increased pool frequency, side channel development, etc.).
- Connectivity between the river and its floodplain.
- Cooler water temperatures.
- Increased flow as water is retained in the soil profile longer than pre-project land use.

Riparian Habitat Project Types:

1. Livestock water gaps and alternative watering sources
2. Riparian fencing
3. Riparian revegetation
4. Land acquisition
5. Conservation easement

Instream Habitat Projects Conditions:

- ESA listed stocks (spring and fall Chinook salmon, and steelhead and bull trout) are equally important and will not be treated preferentially.
- The project addresses a limiting factor identified through either a limiting factors analysis, assessment, or through technical review consensus.
- Projects with greater temporal longevity and geographic size should be prioritized over shorter lived, smaller projects.
- Projects that decrease stream length (straighten the river) are not eligible.
- All instream habitat projects will be assigned a 10-year duration due to contractual obligations and the documented average physical longevity of instream habitat projects.
- Barrier removal projects that do not open up useable habitat are not eligible.

Benefits:

- Instantaneous instream habitat improvement
- Increased bank stability and decreased erosion

Instream habitat project types:

1. Fish passage barrier removal
2. Instream habitat development
3. Levee removal/setback

Upland Habitat Project Conditions:

- Sediment entering a perennial, non-fish bearing stream will ultimately affect ESA listed species some location downstream. Therefore an eligible project location must be at, or upstream from an ESA listed species spawning location.
- The more distal to a stream that sediment originates the less likely it is to end up in a stream.
- Agricultural sediment is a factor limiting salmonid recovery; therefore, any project that reduces agriculturally derived sediment will benefit salmon recovery.
- This scorecard will be used for all NRCS identified upland BMP's (direct seed, range management, timber management, grass waterways, sediment ponds, terraces, etc.)
- Sponsor will establish maximum allowable acreage.

Upland Habitat Project Benefits:

- Greater soil moisture holding capacity which reduces runoff magnitude from tilled soils or rangelands
- Reduced erosion due to water infiltration opposed to water runoff

Upland Habitat Project Types

1. Sediment ponds
2. Terrace
3. Grass waterway
4. No/Till or Direct seeding

Water Conservation Projects (Mike, Terry and Bill Neve, we can not adequately complete this section without your input)

Benefits

- Passage to upstream habitats
- Cooler water temperature
- Hyporheic recharge
- Groundwater/surface water connectivity

Water conservation project types:

1. Surface water right acquisition or lease
2. Hydraulically connected ground water acquisition or lease
3. On –farm irrigation efficiency projects
4. Water delivery efficiency projects
5. Alternative crop development projects

After the individual projects are evaluated and assigned points based on their location, geographic size, term, number of limiting factors addressed and certainty, they are carried forward to the comprehensive scoring matrix. The matrix was designed to allow comparison of the discrete project types to one another. Simply put, it is designed to take a mixture of project types (upland, instream, riparian, water conservation and assessments) that have been individually ranked and compare them against each other to arrive at a final ranking of projects within the Snake River Salmon Recovery Region for funding consideration by the Salmon Recovery Funding Board

The intent of this two-step process is to maintain the integrity of scores that each project earns and then build upon that score giving points for project size, relationship to other projects, project longevity, the number of listed species that will benefit from the project, and the number of limiting factors the project addresses recognizing that specific projects may rank well within their category but they may not be the best project for the region. This is somewhat redundant because those same factors were included in the individual project ranking process, however, the comprehensive scoring matrix takes a look at the projects from a regional viewpoint and assigns additional points to projects that are strategic (addresses multiple limiting factors, large, and long-lived). Lastly we value community support for salmon recovery projects and realize that some projects may be controversial and not supported by the community. For this reason we have provided a column, which allows for the addition of up to 10 points based on the vote of our citizens panel members.

Typically projects proposed for funding contain several elements, like instream and riparian, or upland and riparian enhancement. Occasionally, projects contain instream habitat, fish screens, water conservation practices, and riparian revegetation. These comprehensive projects are looked upon favorably because they address multiple factors currently limiting salmonid production in the Snake River basin. For this reason, the individual project ranking criteria and scores contain point categories for “other project benefits”.

This process is somewhat onerous on project sponsors but we believe that it is equitable and allows funding agencies the opportunity to see the process that we have gone through to arrive at a comprehensive, ranked project list.

## **SUMMARY**

Upland, riparian and instream habitat conditions have been drastically changed over the last century largely due to timber harvest, road construction, livestock grazing, and agricultural activities. The uplands have lost their organic content and ability to hold moisture, large trees have been removed from the forest and forest roads contribute sediment, roads and cities have infringed on the riparian area and have resulted in rivers that are much straighter than historically. Water withdrawals have left river sections too warm for salmonids to use, and floods have forced people to fear complex habitats.

Our strategy is to review historic conditions, assemble a committee to represent all stakeholders in the region and to identify preservation and restoration projects in the basin that are supported by a well-educated public and are consistent with the habitat needs of the basin.